ABSTRACT

A strained semiconductor device suitable for use in an integrated circuit and a method for manufacturing the strained semiconductor device. A mesa isolation structure is formed from a semiconductor-on-insulator substrate. A gate structure is formed on the mesa isolation structure. The gate structure includes a gate disposed on a gate dielectric material and has two sets of opposing sidewalls. Semiconductor material is selectively grown on portions of the mesa isolation structure adjacent a first set of opposing sidewalls of the gate structure and then doped. The doped semiconductor material is silicided and protected by a dielectric material. The gate is silicided wherein the silicide wraps around a second set of opposing sidewalls and stresses a channel region of the semiconductor device.